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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHO, HONG SOL

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/773,474	Applicant(s) BISHARA, NAFEA	
	Examiner Hong Cho	Art Unit 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 17 27 37 47 57 65 and 75 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-16, 18-26, 28-36, 38-46, 48-56, 58-64, 66-74 and 76-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on 11/26/2009. Claims 1-78 are pending in the instant application.

Claim Rejections – 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1-6, 9, 11-16, 18-26, 29, 31-36, 38-46, 49, 51-56 and 58-64, 67, 69-74 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe et al (US 7099317), hereinafter referred to as Ambe, in view of Jain et al (US 20030079040), hereinafter referred to as Jain.

Re claims 1, 21, 41 and 59, Ambe discloses a switch with a plurality of ports to receive Ethernet packets (figure 1; column 5, lines 30-35). Ambe discloses an IP multicast packet with an IP multicast destination address and an IP source address (column 21, lines 5-15) and an IP multicast table with entries comprising an IP multicast

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destination address and an IP source address and determining egress ports to transmit Ethernet packets to the selected one or more ports (column 3, lines 37-43). Ambe fails to disclose a controller requesting generation of an entry in a bridge table based on multicast source and destination addresses. Jain discloses creating an entry in a session table based on multicast source and destination addresses (paragraph [0053], lines 10-13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ambe with the teaching of Jain in creating an entry based on request so that a given table would be built based on not random way but based on user request.

Re claims 2, 22, 42 and 60, Ambe discloses searching an IP multicast table with source IP address, multicast IP address and VLAN ID (virtual LAN (local area network) identifier) (*selecting a port based on an IP multicast destination address, an IP source address and VLAN ID*, column 21, lines 50-52).

Re claims 3, 23, 43 and 61, Ambe discloses an IP multicast table with IP addresses and ports (*a memory to store associations including an entry between IP addresses and the ports*, column 21, lines 1-4) and determining the egress port based on a source IP address and a destination IP address in the table (*to select the one or more of the ports based on the associations stored in the memory*, column 21, lines 5-7; lines 12-14).

Re claims 4, 24, 44 and 62, Ambe discloses searching the IP multicast table to find a entry with a given source IP address and destination IP address (*to identify one of the associations stored in the memory based on the IP multicast destination address and*

the IP source address, column 21, lines 12-14) and forwarding the packet to egress ports if the entry is found (to confirm the association is an association between an IP address and ports, column 21, lines 21-22; 33-34).

Re claims 5, 25, 45 and 63, Ambe discloses searching the IP multicast table with key based on source IP address and destination IP address *(to generate a key based on the IP multicast destination address and the IP source address and identifying the one of the associations based on the key, column 21, lines 12-14).*

Re claims 6, 26, 46 and 64, Ambe discloses the IP multicast table associating IP addresses and egress ports *(to determine whether the association is marked as an IP multicast association, column 21, lines 1-4).*

Re claims 9, 29, 49 and 67, Ambe discloses sending the IP multicast packet to CPU if the entry is not found *(when one of the associations is not identified, transmit the Ethernet packet from ports as destination unknown, column 21, lines 14-15).*

Re claims 19 and 39, Ambe discloses a switch-on-chip configuration *(an integrating circuit comprising an apparatus, column 5, lines 15-16).*

Re claims 20 and 40, Ambe discloses an Ethernet gigabit switch (column 5, lines 30-31).

Re claims 11, 12, 31, 32, 51, 52, 69 and 70, Ambe discloses an address resolution logic determining egress ports based on MAC (media access control) destination address and VLAN ID *(a data-link layer switch controller selecting a port based on MAC address and VLAN ID to transmit the Ethernet packet, column 3, lines 34-36).*

Re claims 13, 33, 53 and 71, Ambe discloses multicast table with MAC addresses and ports (*a memory to store associations between IP addresses and the ports*, column 3, lines 34-36) and determining the egress port based on the association between MAC address and a port in the table (*to select the one or more of the ports based on the associations stored in the memory*, column 12, lines 29-32).

Re claims 14, 34, 54 and 72, Ambe discloses searching the multicast table to find an entry with a given MAC address (*to identify one of the associations stored in the memory based on the MAC destination address*, column 12, lines 21-23) and forwarding the packet to egress ports if the entry is found (*to confirm the association is an association between a MAC address and ports*, column 12, lines 30-32).

Re claims 15, 35, 55 and 73, Ambe discloses searching the multicast table with key based on MAC destination address (*to generate a key based on the multicast destination address and identifying the one of the associations based on the key*, column 12, lines 21-23).

Re claims 16, 36, 56 and 74, Ambe discloses the multicast table associating a MAC address and egress ports (*to determine whether the association is marked as a MAC multicast association*, column 12, lines 21-23; lines 30-32).

Re claims 18, 38, 58 and 76, Ambe discloses an IP multicast table (*a bridge table*) with IP addresses and ports (*a memory to store a bridge table with IP addresses and the ports addressable by a key*, column 21, lines 1-4) and determining the egress port based on a source IP address and a destination IP address in the table (*to select the one or more of the ports based on the IP multicast destination address and the IP source address*,

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column 21, lines 5-7; lines 12-14). Ambe further discloses multicast table with MAC addresses and ports (*a memory to store associations between IP addresses and the ports*, column 3, lines 34-36) and determining the egress port based on the association between MAC address and a port in the table (*to select the one or more of the ports based on the associations stored in the memory*, column 12, lines 29-32).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 8, 10, 28, 30, 48, 50, 66 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe in view of Jain and further in view of Nozaki et al (US 6950431), hereinafter referred to as Nozaki.

Re claims 8, 10, 28, 30, 48, 50, 66 and 68, Ambe discloses searching the IP multicast table to find an entry with a given source IP address and destination IP address (*to identify one of the associations stored in the memory based on the IP multicast destination address*, column 21, lines 21-22; 33-34), but fails to disclose generating a message requesting the creation of an association for the IP multicast address and the IP source address when there is no match. Nozaki discloses creating a new entry with an IP

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multicast address and an IP source address (column 12, lines 3-5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ambe to implement the feature of registering new entry into the IP multicast table for the benefit of faster processing of a multicast packet since a given multicast packet would be distributed to egress ports without going through the process of address learning again.

Claims 77 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ambe in view of Jain and further in view of Brunner et al (US 5982775), hereinafter referred to as Brunner.

Re claims 77 and 78, Ambe discloses all of the limitations of the base claim, but fails to disclose using a bridge table with entries for Media Access Control (MAC) multicast destination addresses for Ethernet bridging. Brunner discloses storing in a forwarding table of the bridge the multicast destination address from the multicast data frame transmitted by the host for the particular multicast session (column 6, lines 8-12). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ambe with the teaching of Brunner for the benefit of forwarding a multicast data frame only to selected ports rather than broadcasting the multicast data frame to all ports.

Allowable Subject Matter

6. Claims 7, 17, 27, 37, 47, 57, 65 and 75 are allowable.

Response to Arguments

7. Applicant's arguments filed on 11/26/08 have been fully considered but they are not persuasive.

The applicant argues that Ambe and Jain do not teach generation of an entry in a bridge table based on an IP multicast destination address and an IP source address. The examiner respectfully disagrees. Ambe discloses a table including IP multicast destination addresses and Jain discloses generating a table entry in a table. In this case, it is the combined teaching of two references that meet all claim limitations. Since claim 1 does not recite a bridge table with IP multicast destination addresses and MAC addresses, the argument in regard to teaching away is moot.

Therefore, the Examiner concludes that the rejection of claims stands.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hong Cho/

Hong Cho

Primary Examiner, Art Unit 2419

1/23/2009